ABSTRACT OF THE DISCLOSURE

This invention provides a system and method for balanced-demodulation procedures that remove image clutter even in the presence of scene motion. A system that employs balanced demodulation moves a chopping reticle located in the intermediate focal plane where front end optics focus a high-resolution image. The chopping reticle has a checkerboard pattern of clear and opaque cells and moves in an uneven rate (e.g. $\Delta x \neq \Delta y$) along the x-axis and y-axis. The resulting image is projected on a focal plane array from which differences are calculated to generate the desired balanced demodulation value. This invention further provides a foveal enhancement of the baseline spatial-modulation staring sensor. In this enhancement the WFOV low-resolution conventional image is displayed to the operator, but with a selectable subarea of that image replaced by a conventionally generated high-resolution image at the same scale. The operator would be able to naturally select the region for foveal enhancement by simply pointing directly at the detail of special interest which would then be displayed to the user at high-resolution. The remainder of the scene would be displayed at low-resolution, typically with marks at the locations of point sources detected by the spatial modulation.